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GB A 2054928
GB A 2054230
GB 1557196
GB 1400654
GB 1274530
GB 1250686
GB 1040594
GB 1019702

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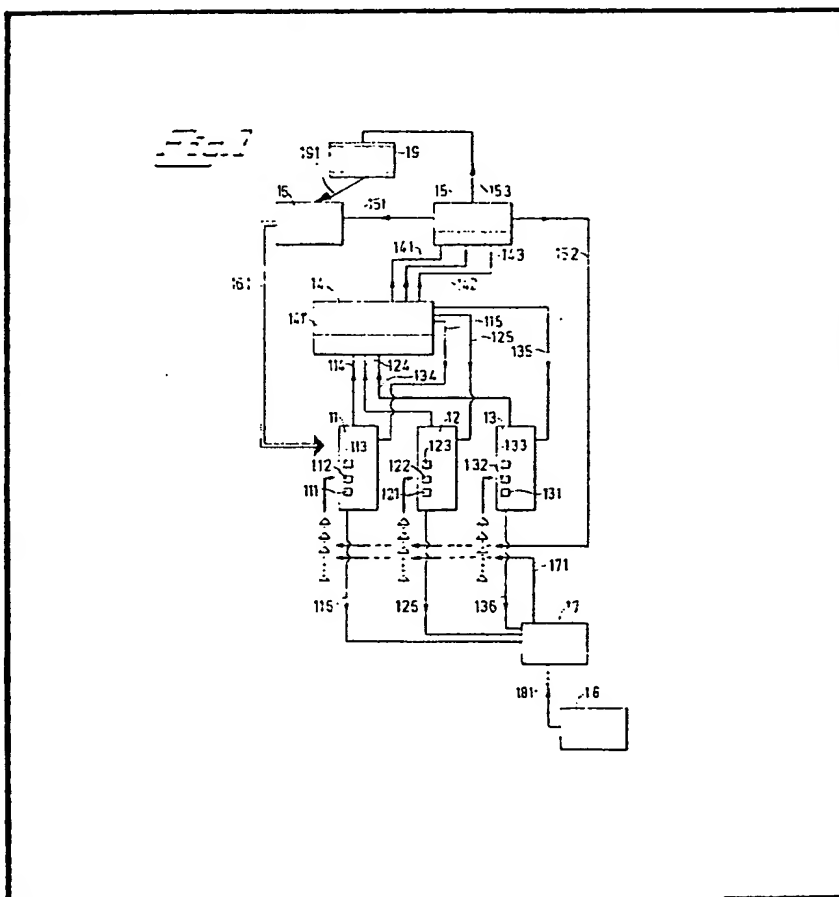(54) **System for rationally managing the retail trade with goods**

(57) A system for rationally managing the retail trade comprises a number of pay desks (111—133), which can be connected to a computer installation (14) comprising a unit (141) for processing information from the pay desks.

With the system are associated account cards intended for customers, on which cards are fed in a permanent manner data on the customer in question. Means at the pay desks scan and forward said data and receive information on purchases made by a customer and possible other data. Means in the processing unit compile and store data and information which later on are emitted to the management of the system (15) and, respectively, to said pay desks at predetermined times.

The computer installation comprises a customer memory for special information on customers and a goods memory for special information on goods, which memories automatically are actuated under certain conditions. In addition, a special test and planning memory is provided for special customer-related goods information, intended to be utilized, for example, during the introduction of a new article.

At a common utilization of the system, the memories are divided into a plurality of partial memories, each of which can be connected to only one user.

Fig. 1

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Fig_1

191 — 19

16   151   15   153

161

141   143   152

14

141'   115

125   135

114   124   134

11   113   12   123   13   133

112   122   132

111   121   131

171

116   126   136   17

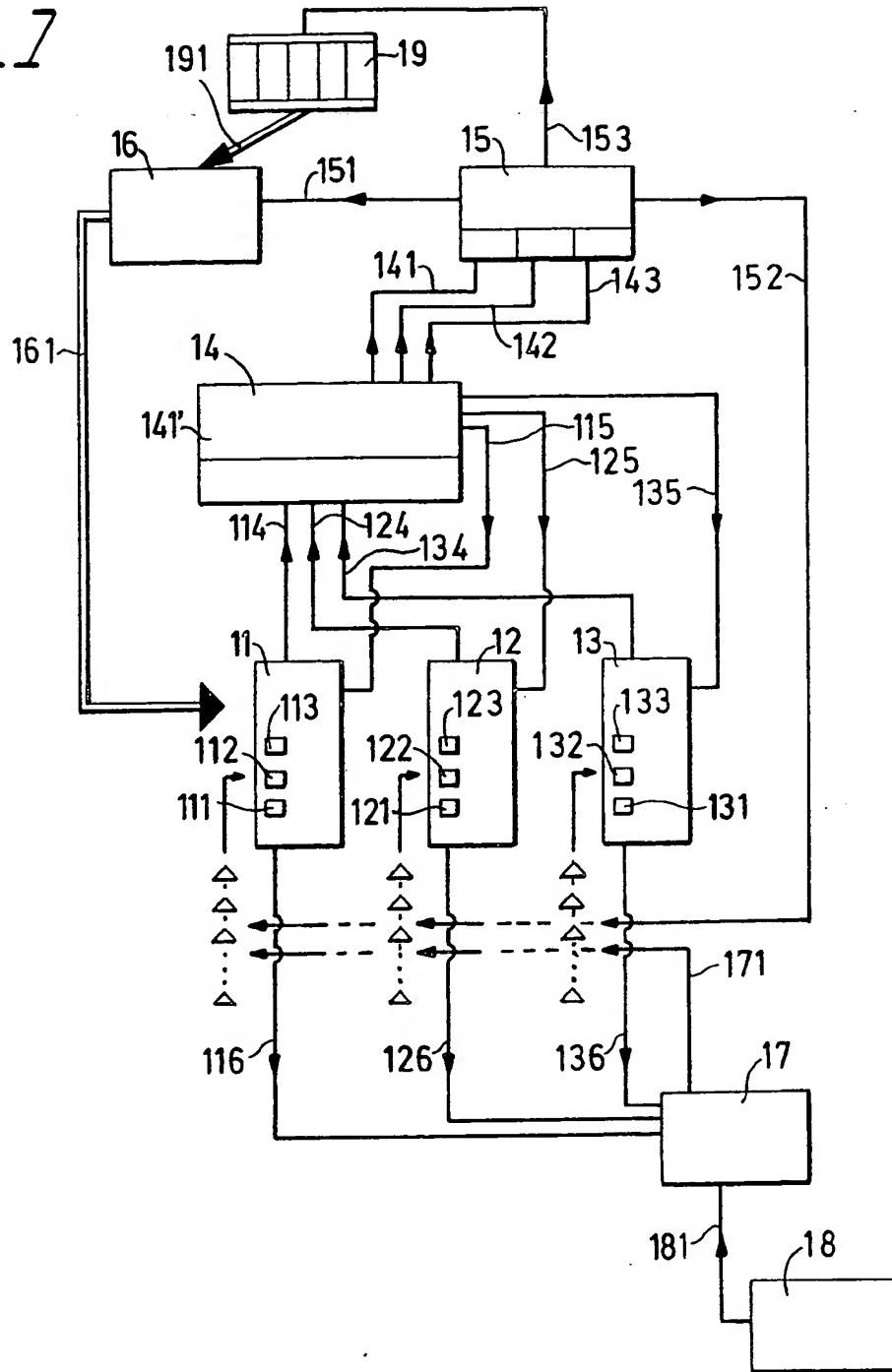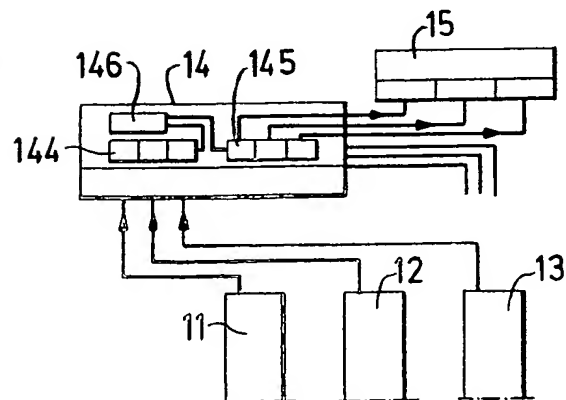181   18

Fig_2

146   14   145   15

144

11   12   13

SPECIFICATION
System for rationally managing the retail trade with goods

Background of the invention
5   This invention relates to a system for rationally managing the retail trade with goods. The invention, more precisely, relates to a system of the kind, which comprises a number of pay desks (electronic cash registers) and a computer
10   installation, to which the pay desks can be connected directly or indirectly, and which is equipped with a unit for processing information fed to the computer installation from the pay desks.
15   By a system according to the invention a more rational flow of information and payments in the retail trade may be obtainable in that preferably an entirely integrated system is established, in which customers, shopkeepers, suppliers and
20   banks are effectively interconnected. All links in this system are stimulated to perform better than before and thereby contribute in the interest of all to a more efficient utilization of the resources and to a reduction of the total costs for the trade with
25   goods.

Prior art
The retail trade with goods has been subjected in the course of years to a radical change, from direct bargaining between buyer and seller with
30   the object of arriving at a price being reasonable and acceptable for both parties, to the large-scale operation of to-day, at which in principle everybody pays about the same price for the same goods. This latter operation has been
35   enforced, for example, by self-service shops and automatic selling with a minimum of staff.
One element in the development is the modern data processing technology, by means of which it has become possible to achieve a total control of
40   the flow of goods between the producer and retail trade. While it is possible to-day to evaluate with high precision the different performances involved in the manufacture of a product and its long-way transport to the shelves of the retailer, there exists
45   substantially no corresponding information whatsoever with respect to the link between the retail trade and final consumer. The retail trade to-day has no instrument enabling it to reward for objective reasons clever and price-conscious
50   customers, no instrument, by means of which it would be possible to additionally rationalize the trade to the benefit of all customers, suppliers and shopkeepers.
It is previously known, that individual cards of
55   various kinds, for example credit cards, account cards and payment cards, can eliminate the mechanical handling of banknotes and coins and thereby increase the comfort for customers and reduce the risk of attempted robberies for shops.
60   It is also known, that similar cards can be used for the withdrawal of banknotes from service boxes of banks, and that by time recording by means of cards information can be collected on the time

and place of different behaviours conducted by
65   the card owner, for example when passing in to or out from a place of work.

Summary of the invention
It is desirable to make available to the retail trade with goods systems of a design such as, by
70   utilizing information on the customers with respect to their structure, buying habits, buying behaviour etc., to render it possible to reward customers who have contributed to a more rational and profitable trade, and, by returning
75   selected information to customers, shop staff and suppliers, to render possible a more rational handling of goods and means of payments to the advantage of both customers and retailers, and to yield rationalization gains, which can be
80   distributed equitably among those who have contributed to the rationalization effects.
A system of the kind referred to in the above introductory part of the description comprises according to the invention account cards intended
85   for customers, into which cards data on the customer in question are fed in a permanent manner. The pay desks, furthermore, are provided with input means for said cards and with means for scanning and forwarding said data and for
90   receiving information on purchases made and possibly other data, for example time, place, quantity, price etc. The processing unit of the data processing installation comprises means for rational compilation and subsequent storage of
95   said data and information, and means for emitting information items to the management of the system, to the pay desks and possibly to the customers at times predetermined in dependency on said data and/or information.

100 ## Brief description of the drawing
The invention is described in greater detail in the following, with reference to the accompanying drawing, in which Fig. 1 shows schematically a system according to the
105   invention, and Fig. 2 shows in greater detail some units comprised in the system according to Fig. 1.
Owing to the highly developed modern computer technology, it is possible according to the invention to indirectly revive by means of the
110   proposed system the previous bargaining moment between buyer and seller.
One prerequisite thereof is easy availability of correct information on customers, goods and purchases made. As regards customers, the
115   information shall refer to answers on the questions WHERE? WHEN? HOW? WHAT? HOW OFTEN? the customer buys, and information related to the invididuum concerning age, family, residence, economy, buying behaviour etc. As
120   regards goods, they may be divided into different groups, such as high-margin goods (luxury articles), medium-margin goods (capital goods), low-margin goods (consumer goods, foodstuffs) or loss-involving goods etc. The information on
125   purchases made should include, for example, line of goods, quantity, price, time, (day, hours).

The rationalization is based on increased knowledge about customers and goods in the retail trade link, which knowledge, in order to be brought to bear, must be forwarded to customers,
5 pay desks in the shop, shop management, multiple shop management, manufacturers, advertizing agencies and other units. In this way an accurate survey of the demand for goods as a function of time, space, price, frequency etc. is
10 obtained, which is just the instrument required by the retailer for carrying out additional desired rationalization. A well-developed computer-controlled bargaining technique can in this way replace, for example, the time-consuming price
15 bargain of oriental markets.

The system shown schematically in Fig. 1 comprises three shops 11,12,13 with pay desks 111,112,113,121,122,123 and, respectively, 131,132,133, a computer installation 14
20 provided with a processing unit 141, a company management unit 15, a store room 16 and a plurality of sub-suppliers 19.

With the system account cards are associated, which are intended for the customers and
25 indicated in Fig. 1 by small triangles. Into the cards are fed in a permanent manner data on the customer in question concerning, for example, name, address, age, family, residence, leisure time residence, holding of capital goods etc., according
30 to information supplied by the customer on own initiative. The pay desks 111 ... 133 are provided in a manner known per se with input means for said account cards and include means for scanning said data and for receiving (via
35 keyboard) information on purchases made by the customer and possible other data (for example day, hour, place, line of goods, quantity, price, margin etc.).

The processing unit 141 includes means
40 programmed so as to compile and store said data and information from goods distribution and economy aspects, and output means for emitting information items to the shop management and to the pay desks at times, which are
45 predetermined and depend on said data and/or information.

The pay desks in the shop are connected to the input side of the computer installation via lines 114,124,134 for feeding customer data and
50 goods information, and to an output side of the computer installation via lines 1—5,125,135 for receiving customer data and possible other information. Also indirect connection can be imagined, for example in that magnetic tapes
55 once a day are sent to the computer installation. The computer installation 14 comprises a second output side, which is connected over lines 142,142,143 to the unit 15, which via a line 151 transfers information on goods stock etc. to the
60 store room 16, and over a second line 152 transfers information vis the pay desks 111 ... 133 to the customers, for example information on the bonus limit arrived at, accumulated bonus a.s.o. Sub-suppliers 19
65 receive orders from the unit 15 via line 153 and

supply to the store room 16, see direction arrow 191. By means of a coarse direction arrow 161 between the store room 16 and the shops 11,12,13 goods transport to the shops is
70 indicated which is carried out on the basis of the information received previously from the unit 15.

For rendering the picture complete, also a payment loop is shown in Fig. 1, viz. a bank unit 17 and a work place unit 18. The idea is that from
75 the work place 18 salaries and wages are transferred (by computer) via a line 181 to the bank accounts of the customers, and from the pay desks information on charges are transferred via lines 116,126,136 to the customer accounts in
80 the bank unit 17. The customers are informed later on by the banks on these charges, for example by ordinary mail, as indicated by the direction arrow 171.

Special information from the management can
85 be transferred to the customers by mail or via bank or account card with person-addressed invoice when the card is used at a pay desk, for example pay desk 111. This information may refer, for example, to bonus limit arrived at, or
90 accumulated bonus or information on previously demanded goods, a.s.o.

According to a further development of the invention, the computer installation comprises a special customer memory for storing special
95 information for account cards, for example information on purchase totals, granted credit, attained bonus etc. This memory is actuated automatically, for example when a certain total purchase amount (bonus limit) is attained, or a
100 granted credit is being exceeded, for emitting said special information in connection with the scanning of said account card at a pay desk. In Fig. 2 such a customer memory is indicated and designated by 144. The computer installation 14
105 also comprises a special goods memory 145 for storing special information concerning goods, for example, information on the withdrawal of goods (line of goods, quantity/number). This memory is actuated automatically, for example when the
110 quantity/number of a line of goods has dropped to a predetermined level, at which information is emitted to the management of the system, i.e. unit 15, which information in its turn constitutes an excitement for ordering the store room 16 of
115 the system to deliver new goods to the shops. The customer memory 144 and the goods memory 145 each are divided into a plurality of different memories, one for each shop or buying centre, which partial memories can be connected only to
120 the associated shop in question, for example 11 of said shops 11,12,13. The special customer memory also is capable at the scanning of an account card at a pay desk to emit information on whether the account card belongs to a credit-
125 customer or cash-purchase customer, and in the case of a credit-customer also to emit information on whether the purchase amount keyed in and corresponding to the goods withdrawal just made, is held within the stipulated credit limit.
130 The pay desks 111 ... 133 shall be equipped

with modern electronic cash registers, which can be used for cash (banknotes, coins), cheques and account cards of different kinds, and can present a detailed person-related list of the goods bought
5 by a customer. The cash registers also shall comprise a separation means, which distributes the costs for goods bought into margin classes and reports these classes within the framework of a bonus system. The cash registers also shall
10 be provided with card readers, printing means for printing, for example, the customer's name uppermost on the invoice, a watch and a calendar for accurate determination of the time when the purchase was made (rendering possible
15 price differentiation by bonus system rewarding the customer for buying during hours of low business), a memory for customer desires (for example remainder on when a certain article is available at a certain price) and classifying means
20 for storing day-purchases, month-purchases, year-purchases by the customer, on which a drafted bonus system can be based. The term goods used in this connection should be understood in a broad sense and in certain cases
25 also may comprise services.

As already mentioned, one of the objects of the invention is to render possible a more rational utilization of available resources. When, for example, a new product is introduced on the
30 market, it suitably is started within a relatively limited area, whereafter on the basis of experiences made in this area the introduction is continued, possibly modified, in larger areas. To this object, the computer installation 14
35 comprises a special test and planning memory 146 for storing special customer-related goods information, which is established by the compilation of information from the customer memory 144 and goods memory 145 depending
40 on criteria laid-down for a certain handling of a certain goods during a certain period.

The electronic registers at the pay desks preferably are designed so that they can read, check and process credit cards of all kinds, in
45 order thereby to eliminate the present disadvantages emanating from the lengthy handling of so-called stop lists, specially formed invoices for different kinds of cards, a.s.o.

A system according to the invention can be
50 designed for a single shop, for a multiple shop or for several multiple shops in common. The various modifications have in common, that customers intentionally are activated to buying routines, which imply rationalization gains for the shops,
55 which gains automatically will be in the interest of the customers and thereby self-generate new gains. A prerequisite of this generating is the flow of knowledge created by the system and the advantages it yields to all who have the possibility
60 of acting more rationally in the long chain of decisions, on which each purchase is based. Within this framework, a great number of modifications and special designs of systems can be imagined without going beyond the scope of
65 the invention idea.

Claims

1. A system for rationally managing the retail trade with goods, comprising a number of pay desks and a computer installation, to which the
70 pay desks are connected directly or indirectly, and which is provided with a processing unit for processing information fed to the computer installation from the pay desks, characterized in, that with the system are associated account
75 cards intended for customers and fed in a permanent manner with data on the customer in question, that the pay desks (111 ... 133) are provided with input means for the account cards and
80 comprise means for scanning and forwarding the data and for receiving information on purchases just made by the customer and possibly other data (time, place, price etc.), and that the processing unit (141) includes means
85 programmed so as from goods distribution and economy aspects to rationally compile and subsequently store said data and information, and output means for emitting information items to the management (15) of the system and to said
90 pay desks (111 ... 133) at times determined in advance in dependence on said data and/or information.

2. A system as defined in claim 1, characterized in,
95 that the computer installation (14) comprises a special customer memory (144) for storing special information for account cards, for example information on purchase totals or granted credit, which memory (144) is capable to be
100 automatically actuated when, for example, a certain total purchase amount (bonus limit) has been arrived at, or when a granted credit (stop limit) is being exceeded, for emitting said special information in connection with the scanning of
105 said account cards at a pay desk (for example 111).

3. A system as defined in claim 1, characterized in, that the computer installation (14) comprises a
110 special goods memory (145) for storing special information on goods, for example information on the withdrawal of goods (line of goods, quantity/number, price etc.), which memory (145) is capable to be actuated automatically when, for
115 example, the quantity/number of a line of goods drops to a predetermined level, at which information is emitted to the management (15) of the system.

4. A system as defined in the claims 2 and 3,
120 characterized in, that the computer installation (14) comprises a special test and planning memory (146) for storing special customer-related goods information established by the compilation of
125 information from the customer memory (144) and goods memory (145) in dependence on criteria drafted for a certain handling of a certain goods during a certain period.

5. A system as defined in the claims 2 and 3,

intended for several separate buying centres, characterized in,

    that said special customer memory (144) and goods memory (145) are divided into a plurality of
5 different partial memories, one for each buying centre, which partial memories can be connected only to the respective associated buying centre of said buying centres.

    6. A system as defined in claim 2,
10 characterized in,

that said special customer memory (145) is capable at the scanning of an account card at a pay desk (for example 111) to automatically emit information indicating whether the account card
15 belongs to a credit-customer or a cash-purchase customer.

    7. A system for managing the retail trade with goods, substantially as described herein with reference to the accompanying drawings.